

What is claimed is:

1. A radio base station apparatus comprising:  
adaptive array antenna receiving means for carrying  
out adaptive array antenna reception processing on a  
5 signal from a communication terminal apparatus;  
an interference canceller that carries out  
interference cancellation processing on the signal  
subjected to said adaptive array antenna reception  
processing;  
10 reference signal generating means for generating  
a reference signal of the signal from said communication  
terminal apparatus from the demodulated data after being  
subjected to said interference cancellation processing;  
and  
15 weight controlling means for controlling reception  
weights used for adaptive array antenna reception  
processing using a difference between the signal  
subjected to said adaptive array antenna reception  
processing and said reference signal.
- 20 2. The radio base station apparatus according to  
claim 1, wherein the interference canceller further  
comprises channel estimating means for carrying out  
channel estimation using the signal from the  
communication terminal apparatus and replica signal  
25 generating means for generating a replica signal using  
the signal from said communication terminal apparatus,  
and said replica generating means generates a reference  
signal using said channel estimated value.

3. The radio base station apparatus according to claim 1, further comprising error correction processing means for carrying out error correction processing on the demodulated data after interference cancellation processing, wherein the reference signal generating means generates a reference signal using the output of said error correction processing means.

4. The radio base station apparatus according to claim 1, wherein a plurality of communication terminal apparatuses is divided into groups based on the directions of arrival of signals from the communication terminal apparatuses and reception weights are calculated group by group.

5. The radio base station apparatus according to claim 4, further comprising selecting means for selecting a communication terminal apparatus used to generate a reference signal from among the communication terminal apparatuses that belong to a group.

6. A radio base station apparatus comprising:  
adaptive array antenna receiving means for carrying out adaptive array antenna reception processing on a signal from a communication terminal apparatus;  
an interference canceller that carries out interference cancellation processing on the signal subjected to the adaptive array antenna reception processing;

error correction processing means for carrying out error correction processing on the demodulated data after

being subjected to said interference cancellation processing;

reference signal generating means for generating a reference signal in symbol units of the signal from said communication terminal apparatus from the demodulated data after said error correction processing; and

weight controlling means for controlling reception weights used for adaptive array antenna reception processing using a difference between the signal subjected to said interference cancellation processing and said reference signal.

7. A communication terminal apparatus carrying out a radio communication with a radio base station apparatus, said radio base station apparatus comprising:

adaptive array antenna receiving means for carrying out adaptive array antenna reception processing on a signal from the communication terminal apparatus;

an interference canceller that carries out interference cancellation processing on the signal subjected to said adaptive array antenna reception processing;

reference signal generating means for generating a reference signal of the signal from said communication terminal apparatus from the demodulated data after being subjected to said interference cancellation processing; and

weight controlling means for controlling reception

weights used for adaptive array antenna reception processing using a difference between the signal subjected to said adaptive array antenna reception processing and said reference signal.

5        8. A radio communication method comprising:

an adaptive array antenna receiving step of carrying out adaptive array antenna reception processing on a signal from a communication terminal apparatus;

10       an interference canceling step of carrying out interference cancellation processing on the signal subjected to said adaptive array antenna reception processing;

15       a reference signal generating step of generating a reference signal of the signal from said communication terminal apparatus from the demodulated data after being subjected to said interference cancellation processing; and

20       a weight controlling step of controlling reception weights used for adaptive array antenna reception processing using a difference between the signal subjected to said adaptive array antenna reception processing and said reference signal.

9. A radio communication method comprising:

25       an adaptive array antenna receiving step of carrying out adaptive array antenna reception processing on a signal from a communication terminal apparatus;

an interference canceling step of carrying out interference cancellation processing on the signal

subjected to the adaptive array antenna reception processing;

an error correction processing step of carrying out error correction processing on the demodulated data after  
5 being subjected to said interference cancellation processing;

a reference signal generating step of generating a reference signal in symbol units of the signal from said communication terminal apparatus from the  
10 demodulated data after being subjected to the interference cancellation processing; and

a weight controlling step of controlling reception weights used for adaptive array antenna reception processing using a difference between the signal  
15 subjected to said interference cancellation processing and the reference signal.

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